

Substitute form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 3



Complete if Known

Application Number	10/849,617
Filing Date	May 20, 2004
First Named Inventor	Saxler et al.
Group Art Unit	2822
Examiner Name	Amir Zarebian
Attorney Docket Number	5308-413

U.S. PATENTS AND PATENT PUBLICATIONS

Examiner Initials*	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
KBD ↓	1.	US-6,150,680		Eastman et al.	11-21-2000
	2.	US-6,086,673		Molnar	07-11-2000
	3.	US-5,686,737		Allen	11-11-1997
	4.	US-4,755,867		Cheng	07-05-1988
	5.	US-2004/0241970	A1	Ring	12-02-2004
	6.	US-2003/0123829	A1	Taylor	07-03-2003
	7.	US-2002/0167023	A1	Charvarkar et al.	11-14-2002
	8.	US-2002/0008241	A1	Edmond et al.	01-24-2002

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office	Number	Kind Code (if known)			
KBD ↓	9.	EP	0 334 006	A1	Siemens AG	09-27-1989	
	10.	JP	2004-342810		Fujitsu Ltd.	12-02-2004	Abstract
	11.	JP	11261053		Furukawa Electric Co. Ltd.	09-24-1999	Abstract
	12.	PCT	WO 04/008495		Cree, Inc.	01-22-2004	

OTHER NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
KBD ↓	13.	Ando et al., "10-W/mm AlGaIn-GaN HFET With a Field Modulating Plate," <i>IEEE Electron Device Letters</i> , 24(5), pp. 289-291 (May 2003).	
	14.	Chang et al., "AlGaIn/GaN Modulation-Doped Field-Effect Transistors with an Mg-doped Carrier Confinement Layer," <i>Jpn. J. Appl. Phys.</i> , 42:3316-3319 (2003).	
	15.	Chini et al., "Power and Linearity Characteristics of Field-Plagted Recessed-Gate AlGaIn-GaN HEMTs," <i>IEEE Electron Device Letters</i> , 25(5), pp. 229-231 (May 2004).	
	16.	Cho et al., "A New GaAs Field Effect Transistor (FET) with Dipole Barrier (DIB)," <i>Jpn. J. Appl. Phys.</i> 33:775-778 (1994).	
	17.	Coffie et al., "Unpassivated p-GaN/AlGaIn/GaN HEMTs with 7.1 W/MMF at 10 GHz," <i>Electronic Letters online No. 20030872</i> , 39(19), (September 18, 2003).	
	18.	Gaska et al., "Self-Heating in High-Power AlGaIn/GaN HFET's," <i>IEEE Electron Device Letters</i> , 19(3), pp. 89-91 (March 1998).	
	19.	Hikita et al., "350V/150A AlGaIn/GaN Power HFET on Silicon Substrate With Source-via Grouding (SVG) Structure," <i>Electron Devices Meeting, 2004</i> , pp. 803-806, IEDM Technical Digest. IEEE International (Dec. 2004).	

Examiner Signature


Date Considered

4/15/2006

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	10/849,617
		Filing Date	May 20, 2004
		First Named Inventor	Saxler et al.
		Group Art Unit	2822
		Examiner Name	Abul Zafar Khan
(use as many sheets as necessary)		Attorney Docket Number	5308-413
Sheet	2	of	3

OTHER NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
KBD	20.	Kanaev et al., "Femtosecond and Ultraviolet Laser Irradiation of Graphitelike Hexagonal Boron Nitride," <i>Journal of Applied Physics</i> , 96(8), pp. 4483-4489 (Oct. 15, 2004).	
	21.	Kanamura et al., "A 100-W High-Gain AlGaIn/GaN HEMT Power Amplifier on a Conductive N-SiC Substrate for Wireless Base Station Applications," <i>Electron Devices Meeting, 2004</i> , pp. 799-802, IEDM Technical Digest. IEEE International (Dec. 2004).	
	22.	Karmalkar et al., "Very High Voltage AlGaIn/GaN High Electron Mobility Transistors Using a Field Plate Deposited on a Stepped Insulator," <i>Solid State Electronics</i> , Vol. 45, pp. 1645-52 (2001).	
	23.	Kashahara et al., "Ka-band 2.3W Power AlGaIn/GaN Heterojunction FET," <i>IEDM Technical Digest</i> , pp. 677-680 (2002).	
	24.	Komiak et al., "Fully Monolithic 4 Watt High Efficiency Ka-band Power Amplifier," <i>IEEE MTT-S International Microwave Symposium Digest</i> , Vol. 3, pp. 947-950 (1999).	
	25.	Küstters et al., "Double-Heterojunction Lattice-Matched and Pseudomorphic InGaAs HEMT with δ -Doped InP Supply Layers and p-InP Barrier Enhancement Layer Grown by LP-MOVPE," <i>IEEE Electron Device Letters</i> , 14(1), (January 1993).	
	26.	Manfra et al., "Electron Mobility Exceeding 160 000 cm ² /V s in AlGaIn/GaN Heterostructures Grown by Molecular-beam Epitaxy," <i>Applied Physics Letters</i> , 85(22), pp. 5394-96 (Nov. 29, 2004).	
	27.	Manfra et al., "High Mobility AlGaIn/GaN Heterostructures Grown by Plasma-assisted Molecular beam epitaxy on Semi-Insulating GaN Templates Prepared by Hydride Vapor Phase Epitaxy," <i>Journal of Applied Physics</i> , 92(1), pp. 338-345 (July 1, 2002).	
	28.	Manfra et al., "High-Mobility AlGaIn/GaN Heterostructures Grown by Molecular-beam Epitaxy on GaN Templates Prepared by Hydride Vapor Phase Epitaxy," <i>Applied Physics Letters</i> , 77(18), pp. 2888-2890 (Oct. 30, 2000).	
	29.	Parikh et al., "Development of Gallium Nitride Epitaxy and Associated Material-Device Correlation for RF, Microwave and MM-wave Applications," Cree, Inc. (35 slides).	
	30.	Saxler et al., "III-Nitride Heterostructures on High-Purity Semi-Insulating 4H-SiC Substrates for High-Power RF Transistors," International Workshop on Nitride Semiconductors (July 19, 2004).	
	31.	Shiojima et al., "Improved Carrier Confinement by a Buried p-Layer in the AlGaIn/GaN HEMT Structure," <i>IEICE Trans. Electron.</i> , E83-C(12), (December 2000).	
	32.	"Thick AlN template on SiC substrate - Novel semi insulating substrate for GaN-based devices," © 2003 by TDI, Inc., http://www.tdii.com/products/AlN_SiC.html .	
	33.	Tilak et al., "Influence of Barrier Thickness on the High-Power Performance of AlGaIn/GaN HEMTs," <i>IEEE Electron Device Letters</i> , 22(11), pp. 504-506 (Nov. 2001).	
	34.	United States Patent Application entitled "Improved Dielectric Passivation for Semiconductor Devices," Serial No. 10/851,507, filed May 22, 2004 (Cree Docket No. P0274).	
	35.	United States Patent Application entitled "Silicon Carbide on Diamond Substrates and Related Devices and Methods," Serial No. 10/707,898, filed January 22, 2004 (Cree Docket No. P0387).	
	36.	United States Patent Application entitled "Methods of Fabricating Nitride-Based Transistors with a Cap Layer and a Recessed Gate," Serial No. 10/897,726, filed July 23, 2004 (Attorney Docket No. 5308-392).	
	37.	United States Patent Application entitled "High Power Density and/or Linearity Transistors," Serial No. 11/005,107, filed December 6, 2004 (Attorney Docket No. 5308-511).	
	38.	United States Patent Application entitled "Field Effect Transistors (FETs) Having Multi-Watt Output Power at Millimeter-Wave Frequencies," Serial No. 11/005,423, filed December 6, 2004 (Attorney Docket No. 5308-512).	
	39.	United States Patent Application entitled "Group III Nitride Field Effect Transistors (FETs) Capable of Withstanding High Temperature Reverse Bias Test Conditions," Serial No. 11/080,905, filed March 15, 2005 (Attorney Docket No. 5308-516).	
	40.	United States Patent Application entitled "Aluminum Free Group III-Nitride Based High Electron Mobility Transistors and Methods of Fabricating Same," Serial No. 11/118,575, filed April 29, 2005 (Attorney Docket No. 5308-543).	
✓	41.	United States Patent Application entitled "Binary Group III-Nitride Based High Electron Mobility Transistors and Methods of Fabricating Same," Serial No. 11/118,675, filed April 29, 2005 (Attorney Docket No. 5308-544).	

Examiner Signature		Date Considered	4/5/2006
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		First Named Inventor	Saxler et al.		
		Group Art Unit	2822		
		Examiner Name	<i>Robert Zafarian</i>		
Sheet	3	of	3	Attorney Docket Number	5308-413

OTHER NON PATENT LITERATURE DOCUMENTS			
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<i>KBD</i>	42.	United States Patent Application entitled "Composite Substrates of Conductive And Insulating or Semi-Insulating Group III-Nitrides For Group III-Nitride Devices," Serial No. 11/103,127, filed April 11, 2005 (Attorney Docket No. 5308-551).	
	43.	United States Patent Application entitled "Thick Semi-Insulating or Insulating Epitaxial Gallium Nitride Layers and Devices Incorporating Same," Serial No. 11/103,117, filed April 11, 2005 (Attorney Docket No. 5308-553).	
	44.	United States Patent Application entitled "Cap Layers and/or Passivation Layers for Nitride-Based Transistors, Transistor Structures and Methods of Fabricating Same," Serial No. 10/996,249, filed November 23, 2004 (Attorney Docket No. 5308-373).	
	45.	Walker, J. L. B. (Ed.), <i>High Power GaAs FET Amplifiers</i> , Norwood, MA: Artech House, pp. 119-120 (1993).	
	46.	Wu et al., "3.5-Watt AlGaIn/GaN HEMTs and Amplifiers at 35 GHz," IEDM-2003, Cree, Inc.	
	47.	Wu et al., "3.5-Watt AlGaIn/GaN HEMTs and Amplifiers at 35 GHz," Cree Santa Barbara Technology Center, Goleta, CA 93117.	
	48.	Wu et al., "30-W/mm GaN HEMTs by Field Plate Optimization," <i>IEEE Electron Device Letters</i> , 25(3), pp. 117-119 (March 2004).	
	49.	Wu et al., "Bias-dependent Performance of High-Power AlGaIn/GaN HEMTs," <i>IEDM Technical Digest</i> , p. 378-380 (2001).	
	50.	Wu et al., "Linearity Performance of GaN HEMTs With Field Plates," DRC 2004, Cree, Inc.	
	51.	Wu et al., "Linearity Performance of GaN HEMTs With Field Plates," Cree Santa Barbara Technology Center, Goleta, CA 93117.	
	52.	Yu et al., "Schottky Barrier Engineering in III-V Nitrides via the Piezoelectric Effect," <i>Applied Physics Letters</i> , 73(13), pp. 1880-1882 (Sept. 28, 1998).	
<i>V</i>	53.	Zhang et al., "High Breakdown GaN HEMT with Overlapping Gate Structure," <i>IEEE Electron Device Letters</i> , 21(9), pp. 421-423 (September 2000).	

Examiner Signature	<i>John T. Dwyer</i>	Date Considered	<i>4/5/2006</i>
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Attorney Docket Number	5308-413
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4/5/2006

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Sheet

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of

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Filing Date

First Named Inventor

Group Art Unit

Examiner Name

Attorney Docket Number

10/849.617

May 20, 2004

Saxler

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5308-413

Examiner
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Cite No.

U.S. Patent Document

Number

Kind Code
(if known)

Name of Patentee or Applicant of Cited Document

Date of Publication of Cited Document
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Ambacher et al., "Two Dimensional Electron Gases Induced by Spontaneous and Piezoelectric Polarization Charges in N- and Ga-face AlGa_N/Ga_N Heterostructures," *Journal of Applied Physics*. Vol. 85, No. 6, pp. 3222-3233 (March 1999).

Examiner Signature

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AUG 26 2004

(use as many sheets as necessary)

Sheet A1 of AS

Complete if Known

Application Number	10/849,617
Filing Date	May 20, 2004
First Named Inventor	Saxler
Group Art Unit	2654
Examiner Name	Robert A. Saxler
Attorney Docket Number	5308-413

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		Number	Kind Code (if known)		
NBD	1.	Re. 34,861		Davis et al.	02-14-1995
	2.	6,639,255		Inoue et al.	10-28-2003
	3.	6,586,781		Wu et al.	07-01-2003
	4.	6,548,333		Smith	04-15-2003
	5.	6,515,316		Wojtowicz et al.	02-04-2003
	6.	6,448,648	B1	Boos	09-10-2002
	7.	6,429,467		Ando	08-06-2002
	8.	6,316,793		Sheppard	11-13-2001
	9.	6,218,680	B1	Carter, Jr. et al.	04-17-2001
	10.	6,177,685	B1	Teraguchi et al.	01-23-2001
	11.	6,064,082		Kawai et al.	05-16-2000
	12.	6,046,464		Schetzina	04-04-2000
	13.	6,028,328		Riechert et al.	02-22-2000
	14.	5,946,547		Kim et al.	08-31-1999
	15.	5,885,860		Weitzel et al.	03-23-1999
	16.	5,705,827		Baba et al.	01-06-1998
	17.	5,701,019		Matsumoto et al.	12-23-1997
	18.	5,523-589		Edmond et al.	06-04-1996
	19.	5,393,993		Edmond et al.	02-28-1995
	20.	5,298,445		Asano	03-29-1994
	21.	5,296,395		Khan et al.	03-22-1994
	22.	5,292,501		Degenhardt et al.	03-08-1994
	23.	5,210,051		Carter, Jr.	05-11-1993
	24.	5,200,022		Kong et al.	04-06-1993
	25.	5,192,987		Khan et al.	03-09-1993
	26.	5,172,197		Nguyen et al.	12-15-1992
	27.	5,053,348		Mishra et al.	10-01-1991
	28.	4,946,547		Palmour et al.	08-07-1990
	29.	4,788,156		Stoneham et al.	11-29-1988
	30.	4,727,403		Hilda et al.	02-23-1988
	31.	4,471,366		Delagebeaudeuf et al.	09-11-1984
	32.	4,424,525		Mimura	01-03-1984
	33.	2004/0061129	A1	Saxler et al.	04-01-2004
	34.	2004/0029330	A1	Hussain et al.	02-12-2004
	35.	2004/0021152	A1	Nguyen et al.	02-05-2004
	36.	2003/0102482	A1	Saxler	06-05-2003
	37.	2003/0020092	A1	Parikh et al.	01-31-2003
	38.	2002/0167023	A1	Chavarkar et al.	11-14-2002
	39.	2002/0066908	A1	Smith	06-06-2002
	40.	2002/0017696	A1	Nakayama et al.	02-14-2002
	41.	2001/0023964	A1	Wu et al.	09-27-2001
	42.	2001/0020700	A1	Inoue et al.	09-13-2001
	43.	2001/0015446	A1	Inoue et al.	08-23-2001

Examiner Signature

Thomas K. Dwyer

Date Considered

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Sheet	A2	of	A3
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	45.	JP	2002016087	A	NEC Corp	01-18-2002	Abstract
	46.	JP	2001230407	A	Matsushita Electric Industrial Co. Ltd.	08-24-2001	Abstract
	47.	PCT	WO 01/57929	A1	Cree Lighting Company	08-09-2001	
	48.	JP	10-050982		Nippon Telegraph & Telephone Corp.	02-20-1998	Abstract
	49.	PCT	WO 93/23877	A1	Massachusetts Institute of Technology	11-25-1993	
	50.	EP	0 563 847	A2	Matsushita Electric Industrial Co., Ltd.	10-06-1993	

OTHER NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published			T
KBD	51.	Asbeck et al. "Piezoelectric charge densities in AlGaIn/GaN HFETs," <i>Electronics Letters</i> . Vol. 33, No. 14, pp. 1230-1231 (1997).			
	52.	Ben-Yaacov et al., "AlGaIn/GaN Current Aperture Vertical Electron Transistors with Regrown Channels," <i>Journal of Applied Physics</i> . Vol. 95, No. 4, pp. 2073-2078 (2004).			
	53.	Breitschadel et al. "Minimization of Leakage Current of Recessed Gate AlGaIn/GaN HEMTs by Optimizing the Dry-Etching Process," <i>Journal of Electronic Materials</i> . Vol. 28, No. 12, pp. 1420-1423 (1999).			
	54.	Burm et al. "Recessed Gate GaN MODFETS," <i>Solid-State Electronics</i> . Vol. 41, No. 2, pp. 247-250 (1997).			
	55.	Burm et al. "Ultra-Low Resistive Ohmic Contacts on n-GaN Using Si Implantation," <i>Applied Physics Letters</i> . Vol. 70, No. 4, 464-66 (1997).			
	56.	Chen et al. "Cl2 reactive ion etching for gate recessing of AlGaIn/GaN field-effect transistors," <i>J. Vac. Sci. Technol. B</i> . Vol. 17, No. 6, pp. 2755-58 (1999).			
	57.	Eastman et al. "GaN materials for high power microwave amplifiers," <i>Mat. Res. Soc. Symp. Proc.</i> Vol. 512 (1998).			
	58.	Eastman et al. "Undoped AlGaIn/GaN HEMTs for Microwave Power Amplification," <i>IEEE Transactions on Electron Devices</i> . Vol. 48, No. 3, pp. 479-85 (March 2001).			
	59.	Egawa et al. "Recessed gate AlGaIn/GaN MODFET on Sapphire Grown by MOCVD," <i>Applied Physics Letters</i> . Vol. 76, No. 1, pp. 121-123 (January 2000).			
	60.	Gaska et al. "High-Temperature Performance of AlGaIn/GaN HFET's on SiC Substrates," <i>IEEE Electron Device Letters</i> . Vol. 18, No. 1, pp. 492-494 (October 1997).			
	61.	Gaska et al. "Electron Transport in AlGaIn/GaN Heterostructures Grown on 6H-SiC Substrates," <i>Applied Physics Letters</i> . Vol. 72, No. 6, pp. 707-709 (February 1998).			
	62.	Gelmont et al. "Monte Carlo simulation of electron transport in gallium nitride," <i>Journal of Applied Physics</i> . Vol. 74, No. 3, pp. 1818-1821 (August 1993).			
	63.	Heikman, et al., "Mass Transport Regrowth of GaN for Ohmic Contacts to AlGaIn/GaN," <i>Applied Physics Letters</i> . Vol. 78, No. 19, pp. 2876			
	64.	Heikman et al. "Polarization Effects in AlGaIn/GaN and GaN/AlGaIn/GaN heterostructures," <i>Journal of Applied Physics</i> . Vol. 93, No. 12, pp. 10114-10118 (June 2003).			
	65.	Heikman et al., "Growth of Fe-Doped Semi-insulating GaN by Metalorganic Chemical Vapor Deposition," <i>Applied Physics Letters</i> . Vol. 83, No. 1, pp. 439-441 (July 2002).			
	66.	Heikman, Sten J., <i>MOCVD Growth Technologies for Applications in AlGaIn/GaN High Electron Mobility Transistors</i> , Dissertation, University of California—Santa Barbara, September 2002, 190 pages.			
	67.	Karmalkar et al. "Enhancement of Breakdown Voltage in AlGaIn/GaN High Electron Mobility Transistors Using a Field Plate," <i>IEEE Transactions on Electron Devices</i> . Vol. 48, No. 8, pp. 1515-1521 (August 2001).			
	68.	Karmalkar et al. "RESURF AlGaIn/GaN HEMT for High Voltage Power Switching," <i>IEEE Electron Device Letters</i> . Vol. 22, No. 8, pp. 373-375 (August 2001).			
	69.	Kuzmik et al. "Annealing of Schottky contacts deposited on dry etched AlGaIn/GaN," <i>Semiconductor Science and Technology</i> . Vol. 17, No. 11 (November 2002).			
	70.	Neuburger et al. "Design of GaN-based Field Effect Transistor Structures based on Doping Screening of Polarization Fields," <i>WA 1.5, 7th Wide-Gandgap III-Nitride Workshop</i> (March 2002).			
Y	71.	Ping et al. "DC and Microwave Performance of High-Current AlGaIn/GaN Heterostructure Field Effect Transistors Grown on p-Type SiC Substrates," <i>IEEE Electron Device Letters</i> . Vol. 19, No. 2, pp. 54-56 (February 1998).			
Examiner Signature				Date Considered	4/15/2006

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Substitute form 1449A/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/849,617		
		Filing Date	May 20, 2004		
		First Named Inventor	Saxler		
		Group Art Unit	2824		
		Examiner Name	2824 2824 Assigned		
Sheet	A3	of	A3	Attorney Docket Number	5308-392

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KED	72.	Sheppard et al. "High Power Demonstration at 10 GHz with GaN/AlGaIn HEMT Hybrid Amplifiers." Presented at the 58 th DRC, Denver, CO, June 2000.		
	73.	Sheppard et al. "Improved 10-GHz Operation of GaN/AlGaIn HEMTs on Silicon Carbide," <i>Materials Science Forum</i> . Vols. 338-342, pp. 1643-1646, (2000).		
	74.	Shen et al., "High-Power Polarization-Engineered GaN/AlGaIn/GaN HEMTs Without Surface Passivation," <i>IEEE Electronics Device Letters</i> . Vol. 25, No. 1, pp. 7-9 (2004).		
	75.	Sriram et al. "RF Performance of AlGaIn/GaN MODFET's on High Resistivity SiC Substrates," Presentation at Materials Research Society Fall Symposium, 1997.		
	76.	Sriram et al. "SiC and GaN Wide Bandgap Microwave Power Transistors," <i>IEEE Samoff Symposium</i> , Pittsburgh, PA, March 18, 1998.		
	77.	Sullivan et al. "High-Power 10-GHz Operation of AlGaIn HFET's on Insulating SiC," <i>IEEE Electron Device Letters</i> . Vol. 19, No. 6, pp. 198-200 (June 1998).		
	78.	Wu et al. "30-W/mm GaN HEMTs by Field Plate Optimization," <i>IEEE Electron Device Letters</i> . Vol. 25, No. 3, pp. 117-119 (March 2004).		
	79.	Wu et al. "High Al-Content AlGaIn/GaN MODFET's for Ultrahigh Performance," <i>IEEE Electron Device Letters</i> . Vol. 19, No. 2, pp. 50-53 (February 1998).		
	80.	Yu et al. "Schottky barrier engineering in III-V nitrides via the piezoelectric effect," <i>Applied Physics Letters</i> . Vol 73, No. 13, pp. 1880-1882, (September 1998).		
	81.	United States Patent Application entitled "Co-Doping for Fermi Level Control in Semi-Insulating Group III Nitrides," filed January 7, 2004 (Attorney Docket No. 5308-371).		
	82.	United States Patent Application entitled "Nitride Heterojunction Transistors Having Charge-Transfer Induced Energy Barriers and Methods of Fabricating the Same," Serial No. 10/772,882, filed February 5, 2004 (Attorney Docket No. 5308-389.)		
	83.	United States Patent Application entitled "Nitride-Based Transistors with a Protective Layer and a Low-Damage Recess and Methods of Fabrication Thereof," Serial No. 10/758,871, filed January 16, 2004 (Attorney Docket No. 5308-291).		
	84.	United States Patent Application entitled "Nitride-Based Transistors and Methods of Fabrication Thereof Using Non-Etched Contact Recesses," Serial No. 10/617,843, filed July 11, 2003 (Attorney Docket No. 5308-248).		
	85.	United States Patent Application entitled "Semiconductor Devices Having a Hybrid Channel Layer, Current Aperture Transistors and Methods of Fabricating the Same," Serial No. 10/849,589, filed May 20, 2004 (Attorney Docket No. 5308-412).		
	86.	United States Patent Application entitled "Methods of Fabricating Nitride-Based Transistors with a Cap Layer and a Recessed Gate," filed July 23, 2004 (Attorney Docket No. 5308-392).		
	87.	United States Patent Application entitled "Methods of Having Laterally Grown Active Region and Methods of Fabricating Same," filed July 26, 2004 (Attorney Docket No. 5308-374).		
	88.	United States Patent Application entitled, "Silicon Carbide on Diamond Substrates and Related Devices and Methods," (Cree Docket No. P0387).		

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